Profile of temperature in the dissipative over-dense plasma

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Abstract
In this paper, an investigation is undertaken to introduce a simple and effective mechanism of over-dense plasma. The collisional effects reduce the rate of the energy transmission. In the collisional dissipative plasma, dielectric coefficient is complex due to collision and the imaginary part of dielectric coefficient is related to the collision. Materials with complex dielectric coefficient, such as ceramics can be heated easily by microwaves. Here, it is shown that it is possible to heat over-dense plasma in which light transmission is done through excited surface plasma. Also, the temperature increase is due to energy dissipation caused by collision.

Keywords: microwave, dissipation, input wave, over-dense plasma, surface plasma, transparency

For full article, refer to the Persian section